K. GREENHOUSE GAS EMISSIONS AND AIR QUALITY

This section addresses the impacts of the proposed North Park Street Code on greenhouse gas emissions, Climate Change, and ambient air quality and the exposure of people, especially sensitive individuals, to unhealthful pollutant concentrations. The analysis of emissions focuses on whether the proposed project would cause an exceedance of a State or national ambient air quality standard, a health based standard for exposure to toxic air contaminants, or a CEQA threshold recommended by the Bay Area Air Quality Management District (BAAQMD), or conflict with an applicable air quality plan or a plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases.

1. ENVIRONMENTAL SETTING AND REGULATORY FRAMEWORK

This analysis incorporates by reference the description of the environmental setting and regulatory framework provided in the Air Quality and Climate Change chapter of the 2010 Boatworks Project Environmental Impact pages 4.C-1 through 4.C-20 prepared by Environmental Sciences Associates. The following section provides a brief summary of the major environmental and regulatory factors.

Greenhouse Gases and Climate Change

Gases that trap heat in the atmosphere are called greenhouse gases. Greenhouse gases have in common is that they allow sunlight to enter the atmosphere, but trap a portion of the outward-bound infrared radiation, which warms the air. The process is similar to the effect greenhouses have in raising the internal temperature, hence the name greenhouse gases. Both natural processes and human activities emit greenhouse gases.

The major concern with greenhouse gases is that increases in their concentrations are causing global climate change. Global climate change is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation and temperature. Although there is disagreement as to the speed of global warming and the extent of the impacts attributable to human activities, most agree that there is a direct link between increased emissions of greenhouse gases and long term global temperature.

Emissions from human activities such as electricity production and the use of motor vehicles elevate the concentration of greenhouse gases in the atmosphere. This accumulation of greenhouse gases has contributed to an increase in the temperature of the earth's atmosphere and has contributed to global climate change.

The principal greenhouse gases are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H2O). CO2 is the most common reference gas for climate change. To account for the warming potential of greenhouse gases, greenhouse gas emissions are often quantified and reported as CO2 equivalents (CO2e). Large emission sources are commonly reported in millions of metric tons of CO2e (MMTCO2e).

According to studies performed by the City of Alameda for the 2008 City of Alameda Local Action Plan for Climate Protection (LAPCP):

- The City of Alameda generated approximately 303,000 tons of CO2e in the year 2005;

- If the City does not make any changes and continues with "business as usual," citywide annual CO2e emissions can be expected to increase to approximately 329,867 tons by 2020 as a result of an estimated population growth rate of 0.65;
- Over half (54%) of the City's emissions are from transportation (cars, buses, and trucks).
- Twenty nine percent (29%) is from energy and heating demands of residential uses (homes) and 17 percent (17%) is from commercial uses (businesses).

Air Quality

As required by the federal Clean Air Act passed in 1970, the EPA has identified seven criteria air pollutants that are pervasive in urban environments, and for which State and national health-based ambient air quality standards have been established. EPA calls these pollutants criteria air pollutants because the agency has regulated them by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), particulate matter (PM10 and PM2.5), and lead are the seven criteria air pollutants.

The California Health and Safety Code defines Toxic Air *C*ontaminants (TACs) as air pollutants "which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health" (Health and Safety Code Section 39655(a)). By definition, TACs include substances listed in the federal Clean Air Act as "hazardous air pollutants." TACs are less pervasive in the urban atmosphere than criteria air pollutants, but are linked to short-term (acute) or long-term (chronic and/or carcinogenic) adverse human health effects. There are hundreds of different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust from diesel, gasoline, and other engines. Unlike regulations concerning criteria air pollutants, there are no ambient air quality standards for evaluation of TACs based on the amount of emissions. Instead, emissions of TACs are evaluated based on the degree of health risk that could result from exposure to these pollutants.

California State law defines TACs as air pollutants having carcinogenic or non-carcinogenic health effects. A total of 243 substances have been designated TACs under California law; they include the 189 (federal) HAPs adopted in accordance with AB 2588 (Air Toxic Hot Spots Investigation and Assessment Act of 1987), Health & Safety Code § 44300 *et seq.*], including benzene and diesel particulate matter (DPM). TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings. Depending on the risk levels, emitting facilities are required to implement varying levels of risk reduction measures. BAAQMD implements AB 2588, and is responsible for prioritizing facilities that emit air toxics, reviewing health risk assessments, and implementing risk reduction procedure.

2. Regulatory Framework

Greenhouse Gas Emissions:

Executive Order S-3-05

Governor Schwarzenegger signed Executive Order S-3-05 in 2005, in recognition of California's vulnerability to the effects of climate change. Executive Order S-3-05 set forth target dates by which statewide emissions of greenhouse gases shall be progressively reduced, as follows:

By 2010, reduce greenhouse gas emissions to 2000 levels;
By 2020, reduce greenhouse gas emissions to 1990 levels; and
By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The executive order directs the Secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the Governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

Shortly after the issuance of Executive Order S-3-05, the California Legislature adopted Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 recognizes that California is the source of substantial amounts of greenhouse gas emissions. In the Findings and Declarations for AB 32, the Legislature found:

> *The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to the marine ecosystems and that natural environment, and an increase in the incidences of infectious diseases, asthma, and other health-related problems.*

In order to avert these consequences, AB 32 requires the California Air Resources Board (CARB), the state agency charged with regulating statewide air quality, to create a plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." AB 32 requires CARB to design and implement emission limits, regulations, and other measures to reduce statewide greenhouse gas emissions by 2020 to 1990 levels (which is the same target in Executive Order S-3-05). AB 32 directs CARB to begin developing early actions to reduce greenhouse gas emissions while also preparing a Scoping Plan to identify how best to reach the 2020 limit. The measures and regulations to meet the 2020 target are to be in effect by 2012.

In 2008, CARB approved the Climate Change Scoping Plan. The Plan encourages local governments to reduce greenhouse gas emissions by approximately 15 percent from current levels by 2020. The Plan also explains that "local governments will play a significant role in the regional planning process to reach passenger vehicle greenhouse gas emissions reduction targets." With respect to this regional planning

process, the Scoping Plan states that "[i]increasing low-carbon travel choices (public transit, carpooling, walking and biking) combined with land use patterns and infrastructure that support these low-carbon modes of travel, can decrease average vehicle trip lengths by bringing more people closer to more destinations."

Senate Bill 97

SB 97, signed August 2007 (Chapter 185, Statutes of 2007; Public Resources Code Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA.

The CEQA Guidelines section 15064.4 states that the lead agency has discretion as to whether to use a model or other means to quantify GHG emissions or to "rely on a qualitative analysis or performance standards" (Guidelines Section 15064.4(a)). Further, a lead agency should consider the following:

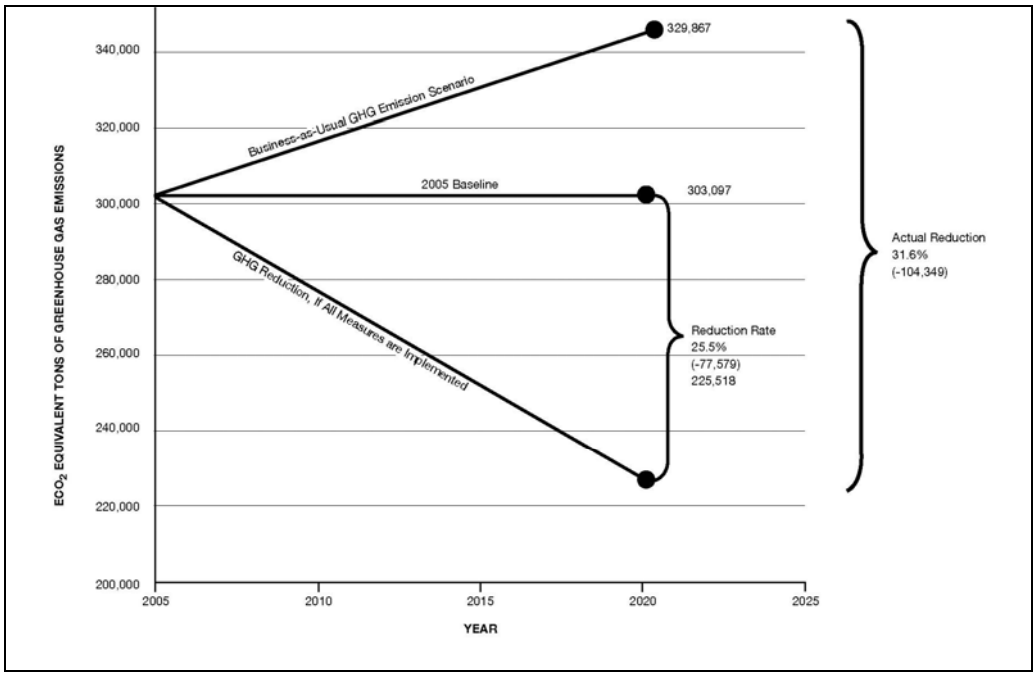
- The extent to which the project may increase or reduce greenhouse gas emissions, compared to existing conditions;
- Whether project emissions exceed a threshold of significance determined applicable by the lead agency; and
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. (Guidelines Section 15064.4(b)).

Senate Bill 375

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's regional transportation plan. These reduction targets will be updated every 8 years, but can be updated every 4 years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects will not be eligible for funding programmed after January 1, 2012.

City of Alameda GHG Emissions and Local Action Plan for Climate Protection

On February 5, 2008, the City of Alameda's City Council adopted the City of Alameda's Local Action Plan for Climate Protection (LAPCP). The LAPCP establishes a goal of reducing greenhouse gas emissions to 25% below 2005 levels by 2020.



To achieve this goal, the Local Action Plan identifies a number of initiatives to that may apply to the proposed project:

- Require that all new major developments' short and long-term transportation emissions are reduced by 10 percent. Examples of strategies to achieve this reduction include transportation demand management strategies and implementation of a Bike Plan, or bicycle facilities.
- Provide transit and shuttles with signal priority lanes and queue jumpers to make transit a more attractive alternative to the automobile.
- Develop and fund alternative transportation strategies in the City's budget.
- Encourage Alameda employers to provide opportunities for "flex hours," compressed workweek and telecommuting schedules to reduce vehicle miles traveled, and reintroduce transportation reduction programs.
- Expand the geographic area of the Work/Live ordinance to provide greater opportunities for reduced work-related commutes.
- Encourage alternative fuel "Car Share" programs.
- Develop park-and-ride lots and expand ridesharing opportunities in large-scale developments at major transportation access nodes.
- Amend the Alameda Municipal Code to include sustainable design and green building standards for all new, substantially expanded, and remodeled buildings
- Develop a wood-burning prohibition ordinance to reduce air pollution for new residential construction

2. IMPACTS AND MITIGATION MEASURES

The following sections include an assessment of the impacts of adoption and implementation of the North Park Street Code on climate change and air quality. The section begins with a list of criteria for significance which establish the thresholds that are used to determine whether the Code or future projects consistent with the Code would result in a significant impact. Less than significant impacts are discussed first. Significant impacts are discussed second.

A. SIGNIFICANCE CRITERIA

The impact of the redevelopment of North Park Street for this analysis, on air quality or climate change would be considered significant if it would:

- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases or conflict with or obstruct implementation of the applicable air quality plan;
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation or result in a cumulatively significant net increase of any nonattainment pollutant;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people;

B. IMPACT ASSESSMENT

Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases or conflict with or obstruct implementation of the applicable air quality plan. (Less than Significant)

The North Park Street Code does not conflict with any applicable plan; policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases or conflict with or obstruct implementation of the applicable air quality plan. The code is consistent with the City of Alameda General Plan, the City of Alameda Local Action Plan, and the Clean Air Plan. The estimated population and employment growth associated with the development under the Code is consistent with General Plan estimates for the North Park Street area.

The North Park Street Code is designed to facilitate redevelopment of the area in a manner that would reduce mobile emission and green house gas emissions. The Code is designed to facilitate redevelopment and reuse of a former Auto Row into a pedestrian oriented, transit friendly, mixed use area on a major transit corridor. The Code will facilitate convenient access between residential and commercial areas that reduce what would otherwise be longer trips to locations outside of the area for trips related to employment, restaurant/entertainment, grocery/food shopping, general retail/commercial and/or recreational purposes. Furthermore, the Code's form-based building design and parking standards are designed to support transit use and promote a pedestrian and bicycle friendly environment.

Mitigation: None Required. Impact is less than significant.

Impact GHG/Air-1: Adoption of the North Park Street Code and redevelopment of the plan area would contribute to greenhouse gas emissions. (Significant and Unavoidable)

Redevelopment of North Park Street would result in an increase in the amount of emissions of greenhouse gases that contribute to climate change. Currently, the area includes a number of vacant and underutilized properties. Under the development projections for the area, the number of new businesses and new residents would increase. Greenhouse gas emissions would increase from increases in motor vehicle trips, as well as from increased energy use by new businesses and new residential homes. Greenhouse gas emissions would also occur during construction of new buildings and rehabilitation of existing buildings. Although each small project may not generate a significant increase in greenhouse gases, the cumulative effect of all future projects in the Plan area would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

In 2010, the City of Alameda evaluated the emissions from 242 single family and multi-family residential units located one block from North Park Street (see 2010 Boatworks Project EIR) using the URBEMIS2007 emissions inventory model developed by the CARB. Mobile source GHG emissions from 242 units were estimated to be 4,774 MT/year of CO2e. Assuming 600 new residents, the project emissions in terms of service population would be 8.0 MT/year/service population. Mobile GHG emissions alone represented approximately 72 percent of the total project emissions and would, of themselves, exceed proposed BAAQMD GHG significance thresholds. For project emissions to fall below the less stringent service population threshold of 4.6 MT/year/service population, it would be necessary to reduce mobile emissions by approximately 59 percent. The analysis concluded that even if the number of units were reduced to 175 units, the total emissions would still exceed the BAAQMD thresholds. The Park Street Code development projections include up to 200 new households and 515 new jobs from redevelopment of the area. Given the findings of the 2009 study, it is apparent that the automobile trips and mobile emissions generated by 200 new households and the new bu-sinesses on North Park Street, and the indirect emissions generated by the increased energy use in the new housing units and new businesses would be considered a significant impact.

To reduce the cumulative impact of North Park Street development on green house gas emission and implement the City of Alameda's adopted goal to reduce greenhouse gas emissions by 25% over the next 20 years as compared to 2005 baseline emissions, the following mitigation measures are recommended:

Mitigation Measure GHG/Air-1a: Mobile Emissions: Implement Mitigation Measure TRANS-2 and TRANS-3 to improve bicycle, pedestrian, and transit travel modes and reduce green house gas from mobile emissions.

Mitigation Measure GHG/Air-1b: Mobile Emissions: Consider amendments to the North Park Street Code to:

- Require new businesses with 10 or more employees to provide: 1) secure employee bicycle parking, 2) transit pass for each employee, 3) Guaranteed Ride Home services, 4) Transportation Services information, and/or 5) preferred carpool parking.

- Require new residential projects with 10 or more units to provide: 1) an on-site car-share program, 2) transit passes for each unit, 3) secure bicycle parking space for each unit either in each unit or in a single "bicycle cage".

Mitigation Measure GHG/Air-1c: Indirect Emissions: Consider amendments to the North Park Street Code to:

- Allow for work/live units in new and rehabilitated buildings in the North Park Street Code planning area.
- Require sustainable design and green building standards for all new, substantially expanded, and remodeled buildings to exceed the most current Uniform Building Code requirements and State energy criteria by 10%.
- Prohibit wood-burning stoves and fireplaces in all new residential construction.
- Require drought tolerant landscape materials consistent with the California Model Water Efficient Landscape Ordinance or Bay Friendly Landscape Guidelines.
- Require "cool roof" design, and/or
- Require rainwater collection systems.

Significance after Mitigation: Cumulatively Significant and Unavoidable.

Impact GHG/Air-2: Construction activities within the North Park Street Plan Area would generate short-term emissions of criteria pollutants, including suspended and inhalable particulate matter and equipment exhaust emissions and potentially expose sensitive receptors to substantial pollutant concentrations. (Significant and Unavoidable)

Construction of the proposed project would have the potential to create air quality impacts through the use of heavy-duty construction equipment, haul truck trips, and vehicle trips generated from construction workers traveling to and from the site. In addition, fugitive dust or particulate matter emissions would result from excavation, trenching, and other construction activities. Mobile source emissions would result from the use of construction equipment such as bulldozers, graders, and excavators. Construction emission concentrations can vary substantially from day to day, depending on the level of activity, the specific type of operation, and the prevailing weather conditions.

Construction activities would also generate pollutant emissions from equipment exhaust related to construction-vehicle activity and construction worker automobile trips. Emissions of ROG and NOx from these emission sources would incrementally add to the regional atmospheric loading of ozone precursors. Construction activities over a projected 20 year build out period would be expected to result in a significant air quality impact.

Mitigation Measure GHG/Air-2: During construction, all projects shall implement both BAAQMD's basic and enhanced dust control procedures including the "basic" dust control program the following:

- Water all active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.

- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep streets (with water sweepers using reclaimed water if possible) at the end of each day if visible soil material is carried onto adjacent paved roads.
    - Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
    - The "enhanced" dust control measures shall include the following:
- Hydroseed or apply non-toxic soil stabilizers to construction areas and previously graded areas inactive for ten days or more
- Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles of dirt, sand, etc.
- Limit traffic speeds on unpaved roads to 15 miles per hour (mph)
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways
- Replant vegetation in disturbed areas as quickly as possible

Significance after Mitigation: Cumulatively Significant and Unavoidable

Impact GHG/Air-3: Redevelopment of the North Park Street Area would result in an increase in operational emissions of criteria air pollutants from on-road motor vehicle traffic traveling to and from site and onsite area sources and potentially expose sensitive receptors to substantial pollutant concentrations. (Significant and Unavoidable)

Redevelopment of North Park Street would result in an increase in operational emission of criteria air pollutants from increases in automobile trips that might be expected from new development in the area. Currently, the area includes a number of vacant and underutilized properties. Under the development projections for the area, the number of new businesses and new residents would increase. Automobile and truck emissions would increase from increases in motor vehicle trips from new land uses and during construction of new buildings and rehabilitation of existing buildings. Although each small project may not generate a significant increase in emissions, the cumulative effect of all future projects in the Plan area would generate emissions, either directly or indirectly, that may have a significant impact on the environment.

Mitigation GHG/Air-3: Implement Mitigations 4k-1a, b, and c, and Mitigation 4k-2.

Significance after Mitigation: Cumulatively Significant and Unavoidable

Create objectionable odors affecting a substantial number of people

The North Park Street Code would not permit the development of any long term uses that would generate objectionable odors or toxic air contaminants. While the Code would permit the establishment of new businesses, marine-related uses and restaurants that may generate some detectable odors typical of

those activities, any such uses proposed in the future are either anticipated not to create significant odor impacts or would need to comply with the BAAQMD Rules and Regulations on odors and toxic air contaminants as described in Section IV.L, Hazardous Materials, and, in so doing, would not result in any significant impacts. Therefore, no odor or air toxics impacts would occur as a result of the proposed North Park Street Code.